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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,778	09/11/2000	Ghassan Semaan	453.02	4433

47372 7590 01/18/2005

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 GATEHOUSE ROAD
SUITE 100 EAST
FALLS CHURCH, VA 22042-1248

EXAMINER

ELALLAM, AHMED

ART UNIT PAPER NUMBER

2662

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,778

Applicant(s)

SEMAAN, GHASSAN

Examiner

AHMED ELALLAM

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to amendment filed on September 29, 2004.
The amendment has been entered.

Claims 1-21 are pending.

Specification

1. The disclosure is objected to because of the following informalities:

On page 12, lines 14 and 15, it is stated "As shown in figure 3, each link between the nodes in a SONET ring is of a fixed bandwidth...." However figure 3 shows only a SONET frame structure, and no links between nodes.

On page 17, lines 1-2, it is stated that "The optical card then transmits a number (N) of bi-directional STS lines 504". Such passage is confusing, because transmitting a structure (i.e. line) does not make sense. A relationship between what is transmitted and the lines is missing.

On page 14, Applicant's Amendment to the specification filed on 7/24/2003 was entered. However, Examiner, upon reviewing the content of the specification, found that the Amendment to delete the content on page 14, lines 1-10, was inappropriate, and unnecessary, because it adds some informalities to the specification, For example, it deleted the continuation of the last paragraph of page 13, as well as the paragraph on page 14 (lines 3-10) without any reason. Applicant is required to reinstate such content in the specification.

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **“first circuit configured to subdivide a payload portion of at least one of SONET data frames”** and **“second circuit configured to assign a protection mechanism corresponding to a SONET protection level to each logical channel”** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 18 and 20, the specification as originally filed does not describe any structure such as buffer, a memory or a storage medium or any step of for storing the claimed limitation of “storing data from two or more logical channels within a single one of the SONET data frame”. Similarly the specification as originally filed does not describe the feature of “the first circuit is further configured to store data from two or more logical channels within a single one of the SONET data frame” as in claim 20.

Regarding claim 19 and 21, the specification as originally filed does not describe the claimed feature of “one or more logical channels of the SONET layer are transmitted over a common carrier channel. However Examiner interpreted such limitation is meant to state “common fiber ring”.

Applicant is required to cancel claims 18-21 as been having new subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-14, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al, US (6,501,758).

Regarding claim 1, Chen discloses a fiber ring (SONET ring) system in which a STS level signals, or combinations of STS level signals are used, the system facilitates effective and efficient communication of ATM and TDM traffic over the common fiber ring. The system, through a variety of configurations and modes of operation, provides flexibility in the distribution of bandwidth between ATM and TDM traffic. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to claimed subdividing a portion of data frames comprising a SONET layer into two or more logical

channels, each logical channel having associated therewith a predetermined bandwidth capacity). Chen further discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. And adjustment of the bandwidth allotted to either traffic type is accomplished provisioning the STS paths accordingly. See column 8, lines 24-39. (Corresponding to assigning a protection mechanism to each logical channel). Chen further discloses an automatic protection switching selector within a node in the fiber ring that chooses incoming signals from either working or protection channels depending on the configuration of the circuit and whether a fault has been detected. In a particular mode of operation, where ring 12 is configured as a bi-directional line-switched ring, automatic protection switching selector identify predetermined ATM - carrying channels and disables line switching protection for these pre-designated ATM - carrying channels. Column 12, lines 8-21. (Corresponding to monitoring the SONET ring transmission to determine protection mechanisms associated with each logical channel).

Regarding claim 2, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to data frames comprise a plurality of STS level one frame).

Regarding claim 3, Chen discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. See column 8, lines 24-39. (Corresponding to

the protection mechanism comprise one of a layer1 SONET protection mechanism and a layer 2 protection mechanism).

Regarding claim 4, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to limitation of claim 4).

Regarding claims 5 and 6, Chen discloses that Fiber ring 12 may comprise, for example, a two-fiber ring configured in a uni-directional path-switched ring (UPSR) mode, or a bi-directional path-switched ring (BLSR) mode.

Regarding claim 7, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information

carried in STM signals. Column 2, lines 37-58. (Corresponding to Layer2 protection mechanism comprises at least one of: an Ethernet protection mechanism, an Asynchronous transport mode protection mechanism, or a time division multiplexing protection mechanism).

Regarding claims 8-14, claims 8-14 are apparatus claims and have substantially the same scope of respective method claims 1-7, thus they are subject to the same rejection.

Regarding claims 19 and 21, Chen discloses transmitting hybrid traffic ATM/TDM over a common fiber ring. See abstract, column 1, and lines 32-62.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Bisson et al, US (6,349,092).

Regarding claim 15, Chen discloses that VT (Virtual tributary) traffic is carried within the transport Signals (data frame). see column 3, lines 1-24, but it does not explicitly disclose that the VT is VT-1.5.

However, Bisson discloses that SONET defines synchronous signals known as virtual tributaries (VTs) to transport lower speed signals and that VTs operate at four levels below STS-1. The four defined sizes of VTs are VT-1.5 (1.728 Mbps) for DS1 signals, VT-2 (2.304 Mbps) for CEPT-1 signals, VT-3 (3.456 Mbps) for DS1C signals, and VT-6 (6.912 Mbps) for DS2 signals. Within an STS-1 frame, each VT occupies a portion of the frame. Within the STS-1, different VT groups can be mixed together to form one STS-1 payload. See column 5, lines 3-11.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the VT frames of Chen comprise VT 1.5 level frames so that lower speed signal can be provided.

6. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

Regarding claims 16 and 17, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14.

Chen does not explicitly discloses that the STS-1 frame are non-contiguous.

However, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the STS-1 frames of Chen being non-contiguous or contiguous as required by the type of data, such as time-sensitive (i.e. TDM data) or non time-sensitive data (i.e. ATM data).

7. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Neuendorff et al, US (6,657,969).

Regarding claims 18 and 20, Chen does not explicitly disclose storing data from the STS frames (two or more logical channels) within a single one of the SONET data frame.

However, Neuendorff discloses in the same field of SONET ring technology, storing data from a plurality of STS frames within a SONET frame in each node of the ring. See abstract, column 2, and lines 25-63.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to store data within STS frame of SONET frame as taught by Neuendorff in the nodes of Chen so that prevention of losing data can be prevented upon the occurrence of failure in the working ring, as well as fast recovery from failures (Neuendorff, col. 2, lines 59-63).

Response to Argument

8. The rejections of claims 1-21 under **35 USC § 112** 1st Paragraph have been withdrawn in view of the Amendment, along with the objection to the specification with reference to the new matter situation.

102 rejection:

After a careful review of the rejections presented on final office action filed on October 21, 2003, and the arguments presented on March 22, 2004, Examiner realized that that the prior art of records used in rejecting claims 1-17 is relevant. The withdrawal

of the rejections indicated in the office action dated June 29, 2004 was mainly due to the presence of "SONET/SDH" limitation that Chen did not disclose.

Examiner therefore is responding to the Arguments filed on March 22, 2004. Assuming that the "SONET/SDH" limitation problem is resolved to simply a SONET limitation.

Claims 1 and 8:

Applicant argues, on page 10 that: *"independent claims 1 and 8 recite, in part, "subdividing data frames payload portion comprising a SONET/SDH layer into two or more logical channels, each logical channel having associated therewith predetermined bandwidth capacity." Chen cannot be relied upon to teach or suggest least this feature" (italics added).* Applicant also stated that: *"Examiner never explicitly stated what feature of Chen he considers to be equivalent to the logical channels as claimed".*

Examiner, completing on what was stated in the final rejection (10/21/03), realized that Applicant mischaracterized the teaching of Chen.

A brief summary of Applicant's invention is provided here for the sake of clarity: The claimed logical channels as described in the specification, are a number of STS frames grouped together for carrying traffic, different traffic is mapped to the assigned "logical channels", and the logical channel are assigned protection levels that depends on the type of traffic and bandwidth availability.

Examiner note that the hybrid ATM/TDM transport over a common fiber channel can be interpreted on the claimed limitation of "subdividing data frames payloads comprising a SONET layer into two or more logical channel", because for data to be transmitted

over the SONET ring, data must be loaded in the SONET frame (which is synchronous) into one or more STS frames that makes the SONET frame, and since there is both the presence of ATM traffic and TDM on the same SONET frame, it read on the claimed limitation. In Addition the hybrid ATM/TDM teaching of Chen does require the subdividing SONET frame payload into different groups of STS for ATM and STS for TDM traffic. Therefore, the teaching of Chen in which the fiber ring (SONET ring) system in which a STS level signals, or combinations of STS level signals that are used, facilitates effective and efficient communication of ATM and TDM traffic over the common fiber ring, and the system of Chen through a variety of configurations and modes of operation, provides flexibility in the distribution of bandwidth between ATM and TDM traffic. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14.

Applicant argues on page 11 that: *each payload carries only one type of information, either ATM or TDM. In other words **cannot be part of a single payload.*** Examiner disagrees, Applicant misinterpreted the detail given by Chen with regard to individual ATM cells or TDM calls as been different from a single payload. The single payload of Applicant is the frame payload that has separate STS groups (separate payloads for different traffic such as ATM or TDM), thus the details of individual loads within the SONET frame taught by Chen is a step that clearly define how individual piece of information are carried out to their destinations, such detail given by Chen does not constitute a solid background for the comparison of individual loads as intended by Applicant. Applicant lack of description of how individual loads are handled between nodes do not stand as a logical reason for making the basis of comparison to the

individual payloads of Chen. Examiner concludes that the individual payloads of ATM and TDM traffic that are mapped into the corresponding STS "loads" that makes up the "single payload" of the SONET frame reads on the payload subdivision as in the claims 1 and 8.

Applicant argues that *"figure2b of Chen, the ATM and TDM traffic are separated on physically separate paths, ATM traffic are carried on physical fiber path 213a (column8, lines 24-26) and TDM traffic are carried on paths 213b-213c (column8, lines 11-13) . Clearly, if TDM and ATM signals are carried on physically separate paths, it is impossible for any single payload to includes both types of information"*. (italics added).

Examiner respectfully disagrees, because Applicant is referring to the TDM and ATM at the physical layer and link layer. It seems that Applicant is misreading Chen's details of having the TDM and ATM traffic on separate path is been an impossibility for any single payload to includes both types of traffic!

Again Chen gave details of how different traffic (TDM, ATM) within the same SONET frame payload (plurality of STS frames) is transmitted over the fiber ring at the physical layer. Examiner consider the Chen details of carrying information at the physical layer is a step that provides more details over Applicant's invention, and should not be a ground for comparison as to disqualify Chen. Stated differently, the specification, pages 18-20, discloses receiving a SONET signal and routing traffic to the proper switch (ATM switch 512 or frame switch 514), and does not describe how these separate TDM and ATM traffic are transmitted to their destination. Therefore the lack of description by Applicant of how the TDM and ATM are carried between nodes at the

physical layer should not negating the teaching of Chen. Examiner believes that, given the above limitations presented in the Applicant argument, Chen does clearly anticipate Applicant invention.

103 rejection: Applicant argues that Bisson is not and cannot be relied upon for establishing a prima facie case. Examiner disagree, given the rejection of claim 8 as being anticipated by Chen, it follow that the limitation taught by Bisson of VT-1.5 which is a standard, can be implemented in any SONET environment.

With regard to claims 16 and 17, a new ground of rejection is presented, in addition contiguity or non-contiguity of STS frames is known in the art, for example voice data of DS(s) channels are usually mapped in contiguous fashion with regard to STS level 1 frame, because doing otherwise would result in silence period in the voice calls at the receiving terminals.

Examiner concludes that the prior art of records used in rejecting claims 1-21 is proper.

Conclusion


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2662

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
January 10, 2005



JOHN PEZZLO
PRIMARY EXAMINER